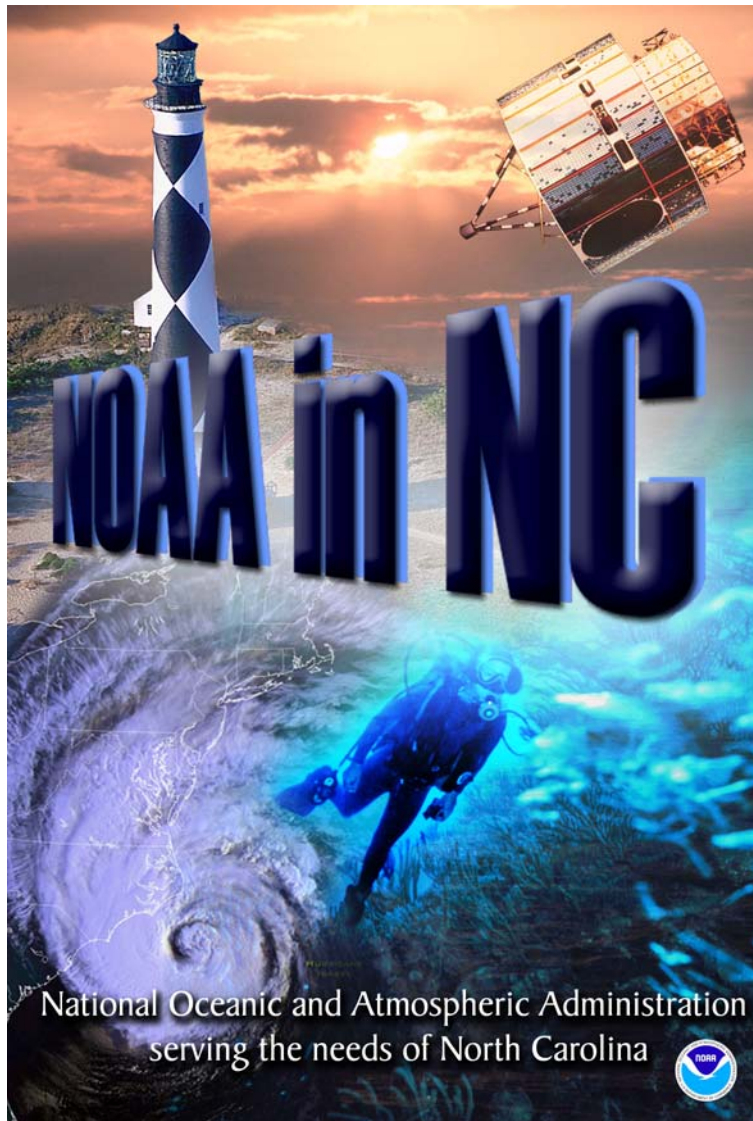


NOAA IN NORTH CAROLINA:

Innovation + Collaboration = Success



Proceedings of Workshop, May 5, 2004, University of North Carolina at Wilmington, Center for Marine Science

EXECUTIVE SUMMARY

On May 5, 2004, a workshop entitled *NOAA in North Carolina: Innovation + Collaboration = Success*, was held at the University of North Carolina at Wilmington’s Center for Marine Science. The main goal of the workshop was to bring together NOAA expertise from across the state to discuss ways to work together more effectively and, thus, enhance NOAA’s service to the state and nation. The primary meeting goals included:

- Improve NOAA information and service to the public;
- Generate new resources through leveraging and NOAA initiatives; and
- Improve outreach, communications, and partnerships between NOAA elements in NC.

Expected outcomes included:

- Inventory of partnership projects in NC;
- List of new potential partnerships;
- List of mechanisms that may improve NOAA information and services to the public; and
- List of next steps for sustaining identified meeting goals.

The workshop agenda included: 1) plenary talks by the selected NOAA partners, including an overview of the current NOAA program structure and planning process by Jeff Payne, deputy director of NOAA’s Coastal Services Center, Charleston, SC; and 2) breakout group discussions that built on the pre-meeting summaries.

The meeting resulted in a wealth of ideas that serve NOAA’s matrix approach to conducting business, including new “research to operations” partnerships and outreach mechanisms. The next step is to review these ideas and seek support (funding and dedicated effort) for the most fruitful. Sustaining this collaborative effort through development of new funding opportunities, better products, and improved services will require on-going effort by an organizing or steering committee. The first priority will be to have the previous committee meet to: 1) develop a charter that expresses a vision and purpose, and details commitments required, 2) prepare a presentation for NOAA management about the *NOAA in NC* effort, and 3) continue to garner the required membership.

Since May 2004, NOAA published its new strategic plan for 2005-2010 (<http://www.spo.noaa.gov/pdfs/NOAA%20Strategic%20Plan.pdf>). “Research to operations” goals used at the meeting to categorize partnership projects fit well within NOAA’s stated strategic goals:

NOAA Goal	Workshop theme
Protect, Restore, and Manage the Use of Coastal and Ocean Resources Through an Ecosystem Approach to Management	E=Ecosystems, F=Fisheries
Understand Climate Variability and Change to Enhance Society’s Ability to Plan and Respond	C=Climate
Serve Society’s Needs for Weather and Water Information	W=Weather/Water
Support the Nation’s Commerce with Information for Safe, Efficient, and Environmentally Sound Transportation	O = Other (also included cultural heritage projects)
Develop coordinated regional and national outreach and education efforts to improve public understanding and involvement*	OE=Outreach/Education

* - **Outreach** is a cross-cut objective related to all other mission goals

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WORKSHOP PURPOSE

On May 5, 2004, a workshop entitled "*NOAA in North Carolina: Innovation + Collaboration = Success*," was held at the University of North Carolina at Wilmington's Center for Marine Science. The main goal of the workshop was bring together NOAA expertise from across the state to discuss ways to work together more effectively and, thus, enhance NOAA's service to the state and nation.

On Tuesday, May 4, 2004, Vice Admiral Conrad Lautenbacher, NOAA administrator, highlighted NOAA goals during a "Planet Ocean Seminar" at the University of North Carolina at Wilmington. His speech included reinforcement of the importance of "grassroots" (outside the Beltway) partnerships to the agency's mission. There are more than a dozen different NOAA operating units, including weather forecast offices and research labs, in North Carolina. Efforts to improve communication and collaboration among these programs address the Admiral's vision.

NOAA is implementing a new integrated strategic planning process with a focus on matrix management. This process is intended to break down traditional "stovepipes" along which many large agency decisions and resources flow, and encourage participation at all levels of an organization. Over the years, NOAA offices and local North Carolina programs have collaborated on many projects. Focus of these partnerships include: fisheries, rip current safety, flooding, climate change, and changing coastal demographics. In 2003, NOAA program representatives began planning this workshop to discuss and highlight how NOAA partners in North Carolina contribute to NOAA's new planning process and vision of "the power of one NOAA."

MEETING GOALS

The primary meeting goals included:

- Improve NOAA information and service to the public;
- Generate new resources through leveraging and NOAA initiatives; and
- Improve outreach, communications, and partnerships between NOAA elements in NC.

Expected outcomes included:

- Inventory of partnership projects that promote "research to operations" in NC;
- List of new potential partnerships;
- List of mechanisms that may improve NOAA information and services to the public; and
- List of next steps for sustaining identified meeting goals.

APPROACH: WORKSHOP PROCESS

The workshop was held May 5, 2004 at the University of North Carolina at Wilmington's Center for Marine Science (www.uncw.edu/cmsr). Prior to the meeting, summaries of existing cross-line office partnerships in NC were solicited from programs across the state (Table 1, summaries in Appendix A). From these pre-meeting summaries, the organizing committee (Appendix B) chose five oral presentations based on how well they represented the workshop goals.

The workshop agenda (Appendix C) included: 1) the plenary talks by the selected NOAA partners, including an overview of the current NOAA program structure and planning process by Jeff Payne,

deputy director of NOAA’s Coastal Services Center, Charleston, SC; and 2) breakout group discussions that built on the pre-meeting summaries. Break-out session objectives included:

1. To identify NOAA strengths and capacity in North Carolina;
2. To identify existing and future collaborations that may bring new resources to the state; and
3. To identify mechanisms to improve communications and enhance existing and future partnerships.

Table 1. Partnership projects sent in before the meeting (complete summaries in Appendix A). Shaded rows were projects chosen for oral presentations. Project goal codes: E=Ecosystems, F=Fisheries, C=Climate, W=Weather/Water, OE=Outreach/Education, O=Other (various other activities such as marine archaeology or commerce/transportation).

Submitter	Title	Goals
Shepard/ Broadwater	Survey and Salvage of the USS Monitor	E,O
Shepard/ Whitfield	Distribution and Behavior of an Invasive Species on the NC Shelf: The Lionfish.	E,F,O
Moss	NOAA Coastal Ocean Research and Monitoring Program	E,W,F,O
Pfaff/Rogers	NOAA-USLA Rip Current Safety Campaign	OE,W
Mosher/ Keener- Chavis	Schools of Ocean Exploration	OE,E
Mosher/ Lopazanski	Estuarine Shoreline Manuals: <i>The Soundfront Series</i> and <i>Drowning the North Carolina Coast: Sea Level Rise and Estuarine Dynamics</i>	OE,E,O
Kolowitz/ Harned	Tar River Basin Flood Mapping Project	OE,W
Benthall	From Weather Observations to Climate Data: Partnership between NWS Forecast Office and NESDIS National Climatic Data Center	C,W
Szabados	NOAA NOS National Water Level Observation Network (NWLON) station at Wrightsville Beach: Support for NWS Data Collection for Hurricane & Coastal Warnings	C,W
Pietrafesa/ Fletcher	Carolinas Coastal Ocean Observation & Prediction System (Caro-COOPS)	OE,C,W,E, F
Johnson	NOS/NCCOS Beaufort Lab and NWS Newport Collaborative Efforts	O
Hess/Auer	NOS Partnership to Investigate Local Ecological and Human Impacts of Long-term Sea Level Rise and Sea Level Variations for a Specific Coastal Region	C,W,E,F
Curran	Island-wide Plan to Reduce Stormwater and Aquaculture Impacts to Estuarine Waters	OE, E

RESULTS

“NOAA in NC” meeting CD will include this report and the Powerpoint presentations.

Dr. Ron Hodson, NC Sea Grant Director, NOAA in NC Workshop Opening Remarks:

It is nice to see so many NOAA colleagues from across North Carolina -- and beyond. But looking out at this crowd reminds me of a family reunion -- one where you get a chance to catch up with cousins and find out what they have been up to in recent years.

And as with most reunions, by the end of the day, we will identify strong connections among us -- connections apparent despite long miles or, in this case, varied disciplines. And over lunch and our afternoon discussions, I am sure we will come up with some grand plans.

But, what will set us apart from some families is that this group will follow through on those plans.

That is because collaboration and partnerships are no longer lofty goals. They are an economic reality to save time and money -- and avoid duplication of efforts.

Of course, partnerships are not a new concept for any of you. The presentations and your notebooks identify a variety of collaborations that are not only successful on a local or state level, but also may be models for the nation.

North Carolina Sea Grant has partnered with many agencies represented today. In fact, last week, in partnership with the National Marine Fisheries Service, we shared with the national Sea Grant extension assembly a current project designed to better inform the public about new regulations on highly migratory species.

The value of today's meeting will be to help identify topics that may involve not only NOAA programs that have traditionally worked together, but also new NOAA partners, as well as other local, state and national partners. Thus, we will multiply the impact our efforts will have in North Carolina and across the country.

The concept for this meeting came together about two years ago when the term "matrix management" began trickling out of NOAA Headquarters -- and we realized that it was an expansion on the partnerships we already had in place.

Planning momentum picked up when we realized Vice Admiral Lautenbacher's seminar would draw many of us to Wilmington this week.

But now the work begins for all of us "cousins" to learn about the other branches of the NOAA family tree. I anticipate that we will come up with some immediate projects, some long-term efforts -- and some dreams of what we *really* wish we could do to realize NOAA goals right here in North Carolina.

Plenary Talks:

Opening remarks by Ronald G. Hodson, Director, NC Sea Grant (*inset*) captured the spirit of the meeting and desire to create a NOAA family in NC. Jeff Payne gave an overview of the NOAA Program structure and planning process (Figure 1). His recommendations for how regional and local offices can best engage in these headquarters activities included:

- Be knowledgeable about the process;
- Be engaged and/or represented in the process;
- Determine where and how you fit in program structure;
- Direct your thinking toward:
 - Contributions to goals, outcomes, results, annual priorities;
 - Valid requirements that are fundable and support mandates and objectives;
 - Knowing your customers and their needs;
 - Contributions to cross-cutting efforts and broad homes;
 - Partnerships that leverage talent, resources, commitment, and advocacy;
 - Transferring research and information with mission relevance to operations; and
 - Cost, schedule, and measured performance.

Five partnership presentations then captured the spirit of NOAA service and cross-line office collaborations (shaded rows in Table 1). The committee intends to maintain the inventory of existing “NOAA in NC” partnerships started for this meeting (Appendix A).

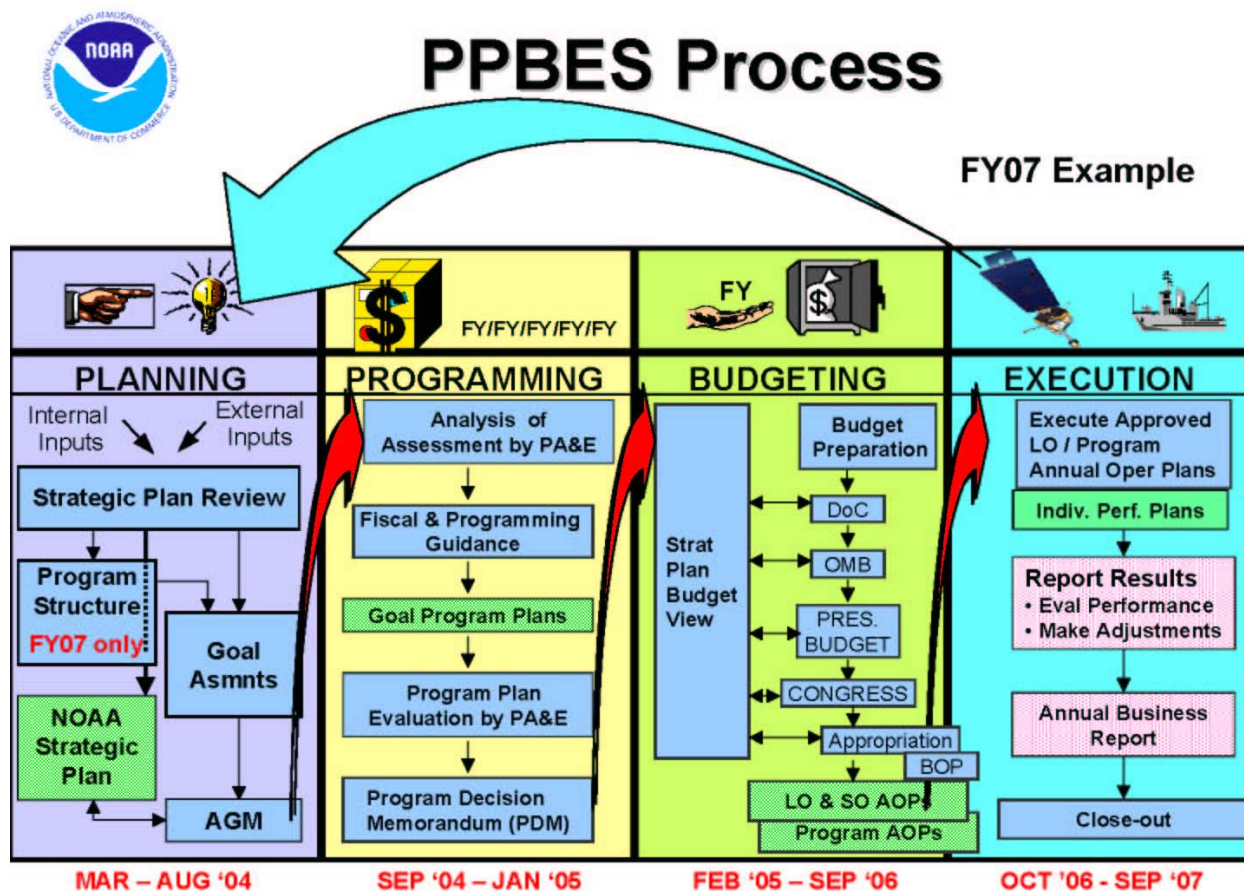


Figure 1. NOAA Program Planning, Budget, and Evaluation System (PPBES) is largely a headquarters-centric activity and difficult to engage in from regional offices.

Breakout Groups:

Notes from the breakout working groups are included in Appendix C. Following are highlights from these discussions:

Vision Statements:

- “One NOAA serving Carolinas and the nation”
- “NOAA research touches US all.”

New Potential Partnerships:

New potential partnerships were discussed in each working group (Table 2). The organizing committee will review these and make recommendations back to the possible project leads regarding possible funding opportunities.

Table 2. New partnerships proposed by working groups. NOAA category codes: E=Ecosystems, F=Fisheries, C=Climate, W=Weather/Water, OE=Outreach/Education, O=Other.

Grp.	Title	NOAA Goal*	Partners
Red	Climate and Fisheries Production	F,C	NOAA Fisheries-Beaufort, NESDIS, NWS, NOS, NC DMF, NC Sea Grant
	Integration of Maps with other NOAA Data and Services	F,E,W	NC Div. Of Marine Fisheries (Coastal Habitat Protection Plan), NWS, NGDC, NOAA Coast Survey, National Geodetic Survey, USGS
	Atmospheric Deposition and Weather	E,W	NC Sea Grant, NOAA Aeronomy Lab, NWS, NC DEP
Yellow	NC Water Hazmat Response	E,O	NOAA Hazmat, NWS, NOS, NC Sea Grant, NOAA Fisheries, NC DNR, NC DEM, US Coast Guard, NC State Ports, NC DWQ
	Community-based Monitoring of Invasive Species	OE,E	NOAA Fisheries, NOS Habitat Center, NC Sea Grant, NC State Ports, Local Groups (schools, etc.), NC DNR
Blue	Education & Outreach between NERRs and Beaufort Fisheries	OE,F,O	NC National Estuarine Research Reserves, NOAA Beaufort Lab, Sea Grant, NWS
	Beach Safety: Rip Currents, Hazardous Marine Life, UV, Health, Safety, Water Quality	OE	NWS, NC Sea Grant, USLA, NOS, NOAA Fisheries, industry (e.g., bottlers)
	Weather, Ocean Observing and Prediction system for NC	W,C,E	SEACOOS, CORMP, USMC, NWS, Sea Grant, USCG, Navy, universities, USGS, NOAA Fisheries, Ocean.US, State of NC, NERRs

Outreach Mechanisms:

Each working group recommended new outreach mechanisms that could be used to promote the meeting goals:

- Improve NOAA information and service to the public;
- Generate new resources through leveraging and NOAA initiatives; and
- Improve outreach, communications, and partnerships between NOAA elements in NC.

Following is a summary list of common ideas from the three groups. They serve to educate both in and outside NOAA:

Meetings and Briefings:

- Share information through periodic rotating meetings (see below for more details of **Annual Symposium** concept) and electronic conferences; include proceedings with comments and feedback;
- Conduct quarterly conference calls to report what is going on with individual offices; update new projects, upcoming events, funding opportunities; include representative and information from DC;
- Host rotating teleconferences to increase participation of more NOAA offices;
- Host and attend meetings with extramural partners including decision makers, city council members, legislators and aides;
- Participate in meetings with agencies outside NOAA, e.g., hurricane conference, “All Hazards” Conference, and “Flood Plain” conference; send/sponsor representative to attend these meetings who will report to “NOAA in NC” partners;
- Annually brief state legislative and congressional staff; perhaps in conjunction with “NOAA in NC” conference/symposium.

Mass Media:

- Produce TV & Radio segments — best vehicles for getting information to the public (e.g., UNCW “Environmental Minute” programs dedicated to NOAA projects, weather channel, PBS);
- Establish Media/NOAA Contacts List — work both ways to deliver news and solicit expert content;
- Use NOAA Weather Radio during clear weather to advertise websites with other information, and promote the NOAA in NC website to “learn more.”

Web/Internet:

- Build “NOAA in NC” Web page: portal to partners; may serve as cooperative model for every “NOAA in Your State” page on NOAA Web site (<http://www.legislative.noaa.gov/noaainyourstate/northcarolina.html>);
- Market “NOAA in NC” website in schools; deliver related education content;
- Establish links to other “NOAA in NC” partners’ websites on all sites;
- Establish listserve to promote communications between NOAA offices;
- Develop “NOAA in NC” database with Web access, including contacts, projects, and products;
- Initiate Online Forum with different topics, event and functions, projects;
- Author electronic “NOAA in NC” newsletter;
- Develop “NOAA in NC” data and metadata Web “clearinghouse portal” linked to NC information, data, and data products (not a dedicated archive, just a link portal).

Exhibits, Presentations, and Publications:

- Create “NOAA in NC” DVDs for mass distribution to schools, informal education centers, and other users/stakeholders (e.g., managers, fishermen, press);
- Write routine articles or column in newsletters or magazines (e.g., *Coastwatch*);
- Participate at fairs, expos and career days; distribute NOAA partners information via brochures and posters; use personnel from other agencies to staff booths at these fairs (e.g., Commercial Fishing Show); National Weather Service (NWS), NC Sea Grant, NOAA Fisheries work together to develop displays;
- Create “NOAA in NC” brochure that lists all agencies and their websites;
- Establish NOAA in NC Speakers Bureau – shared presentations, slides, text (web, DVDs, DVD collection) through NC Sea Grant;
- Post baseline presentation on “NOAA in NC” Web site that can be given to public by any partner.

The concept of an **Annual Symposium** was discussed in all groups. Suggested details follow:

Purposes:

- Networking and Cross Line Office partnerships; keynote speaker; selected presentations, new partnerships (similar to this workshop);
- “NOAA in NC” family social event (fish fry/barbeque);
- Public symposium: submitted/invited presentations; poster sessions; feature NOAA accomplishments, services, and products.

Venues:

- NWS Eastern Regional meeting, held from Maine to South Carolina; participants include directors, outreach, science;

- Partner with NC Coastal Federation;
- Rotate between NOAA programs; offer facilities tours and field excursions;
- Raleigh – provides chance to invite state/federal agencies and congressional staffers.

CONCLUSIONS, ACTIONS & NEXT STEPS

The meeting resulted in a wealth of ideas that serve NOAA's matrix approach to conducting business. The next step is to review these ideas and seek support (funding and dedicated effort) for the most fruitful. Imminent action items include:

- Send out meeting report for review by all participants and solicit their feedback on best partnership opportunities for seeking short-term and long-term support;
- Solicit feedback on the annual symposium concept and seek related support;
- Establish permanent organizing committee; follow-up with participants to serve in 2004-2005; initiate teleconference by organizing committee to launch "NOAA in NC" campaign and committee charter;
- Led by organizing committee, consider participants feedback and prioritize outreach mechanisms and potential partnerships to pursue;
- Present Outreach/Education ideas to the new NOAA Education and Outreach Office.

Clearly, sustaining this collaborative effort through development of new funding opportunities, better products, and improved services will require on-going effort by an organizing or steering committee. The first priority will be to have the previous committee meet to: 1) develop a charter that expresses a vision and purpose, and details commitments required, 2) prepare a presentation for NOAA management about the *NOAA in NC* effort, and 3) continue to garner the required membership.

APPENDIX A: EXISTING "NOAA in NORTH CAROLINA" PARTNERSHIPS**PARTNERSHIP INVENTORY:**

Submitter	Pg #	Title	NOAA Goal*
Shepard/ Broadwater	A2	Survey and Salvage of the USS Monitor	E,O
Shepard/ Whitfield	A3	Distribution and Behavior of an Invasive Species on the NC shelf: The Lionfish.	E,F,O
Moss	A4	NOAA Coastal Ocean Research and Monitoring Program	E,W,F,O
Pfaff/Rogers	A5	NOAA-USLA Rip Current Safety Campaign	OE,W
Mosher/ Keener-Chavis	A6	Schools of Ocean Exploration	OE,E
Mosher/ Lopazanski	A7	Estuarine Shoreline Manuals: <i>The Soundfront Series</i> and <i>Drowning the North Carolina Coast: Sea Level Rise and Estuarine Dynamics</i>	OE,E,O
Kolowith/ Harned	A8	Tar River Basin Flood Mapping Project	OE,W
Benthall	A9	From Weather Observations to Climate Data: Partnership between NWS Forecast Office and NESDIS National Climatic Data Center	C,W
Szabados	A10	NOAA NOS National Water Level Observation Network (NWLON) Station at Wrightsville Beach: Support for NWS Data Collection for Hurricane & Coastal Warnings.	C,W
Pietrafesa/ Fletcher	A11	Carolinas Coastal Ocean Observation & Prediction System (Caro-COOPS)	OE,C,W,E,F
Johnson	A12	NOS/NCCOS Beaufort Lab and NWS Newport Collaborative Efforts	O
Hess/Auer	A13	NOS Partnership to Investigate Local Ecological and Human Impacts of Long-term Sea Level Rise and Sea Level Variations for a Specific Coastal Region	C,W,E,F
Curran	A14	Island-wide Plan to Reduce Stormwater and Aquaculture Impacts to Estuarine Waters	OE, E

Codes: E=Ecosystems, F=Fisheries, C=Climate, W=Weather/Water, OE=Outreach/Education, O=Other

PROJECT TITLE: Survey and Salvage of the *USS Monitor*

COLLABORATING PROGRAMS/ CONTACTS:

- Monitor National Marine Sanctuary (John Broadwater, john.broadwater@noaa.gov; 757-599-3122)
- NOAA Undersea Research Center at University of the North Carolina at Wilmington (NURC/UNCW) (Andrew Shepard, sheparda@uncw.edu; 910-962-2446)
- Mariners Museum, Newport News, VA
- East Carolina University
- U.S. Navy

BROAD CATEGORY: __Outreach and Education; __Climate; __Water and Weather; **_x_Ecosystems;** __Homeland Security; __Fisheries; **_X_Other (title) _Marine Archaeology_**

PROJECT SUMMARY:

Major Objective: Conserve a historic marine heritage resource, the wreck of the civil warship, *USS Monitor*.

NOAA Relevancy: *USS Monitor* was designated the nation's first National Marine Sanctuary. The sanctuary program is managed by NOAA.

Background & Partners: *USS Monitor* wreck lies 16 miles SSE of Cape Hatteras in 240 feet of water. Significant deterioration of the ship has occurred in recent years due to natural processes and an inadvertent anchoring incident. Sanctuary management efforts focus on preventing further deterioration of the wreck, recovery of important ship components and artifacts, and protecting the wreck from damage by human activities such as vessel anchoring and fishing.

Over the last three years, scientists and divers from NOAA, the US Navy, and the Mariners' Museum in Newport News, VA, and several other programs have been leading expeditions to record the condition of the wreck, stabilize her hull, and recover portions of the craft for restoration by the Mariners' Museum (<http://www.monitorcenter.org>). NURC provided the technical dive support and NOS/NMS provide the archaeological expertise.

Products/Outcomes: *USS Monitor* conservation plan at the sanctuary's Web site, <http://www.monitor.noaa.gov>. New exhibit at the Mariners' Museum, described at <http://www.monitorcenter.org>.

PROJECT TITLE: Distribution and Behavior of an Invasive Species on the NC Shelf: The Lionfish.

COLLABORATING PROGRAMS/ CONTACTS:

- NOAA's [Center for Coastal Fisheries and Habitat Research](#) (Dr. Paula Whitfield, paula.whitfield@noaa.gov, 252-728-8714)
- NOAA Undersea Research Center at the University of North Carolina at Wilmington (NURC/UNCW) (Andrew Shepard, sheparda@uncw.edu; 910-962-2446)

BROAD CATEGORY: ☐ Outreach and Education; ☐ Climate; ☐ Water and Weather; ☒ **Ecosystems**;
☐ Homeland Security; ☒ **Fisheries**; ☒ Other (title) **Invasive species**

PROJECT SUMMARY:

Major Objective: Understand the extent and impacts of an invasive reef fish species to reef ecosystems off the Carolinas.

NOAA Relevancy: NOAA is responsible for fisheries management and marine invasive species research.

Background & Partners: Indo-Pacific tropical reef fish, *Pterois volitans* and *Pterois miles* commonly called lionfish, are popular salt-water aquarium fish with distinctive maroon and white stripes, fleshy tentacles above the eyes and below the mouth, and an imposing fan of prickly venomous spines with a poison that can cause severe pain, numbness, and paralysis. They have invaded Atlantic waters in the past 8 years. Non-native marine fish introductions are rare and not widely perceived as posing a significant threat to marine ecosystems. Research on the effects of invasive marine fish species on marine ecosystems, however, has been minimal. NOAA/NCCOS researchers have concluded that introduction of lionfish to U.S. waters is very likely irreversible, they will increase in abundance, and people/lionfish encounters and injuries will increase.

In 2004, with funding and dive support from the NOAA Undersea Research Center at UNCW, Whitfield will lead a team of divers and use an underwater robot to survey and sample lionfish and their habitats to depths of 300 feet. These will be the first such observations in water depths beyond the reach of normal scuba.

Products/Outcomes: Jonathan A. Hare and Paula E. Whitfield. 2003. *An Integrated Assessment of the Introduction of Lionfish (Pterois volitans) to the Western Atlantic Ocean*. Current research will build on assessment and result in peer-reviewed articles. Lionfish Project Web site will be posted at www.uncw.edu/nurc/lionfish.html.

PROJECT TITLE: NOAA Coastal Ocean Research and Monitoring Program**COLLABORATING PROGRAMS/ CONTACTS:**

- Coastal Ocean Research and Monitoring Program at the University of North Carolina at Wilmington (UNCW) (Marvin Moss, mmoss@uncw.edu; Lynn Leonard, leonardl@uncw.edu, 910-962-3490)
- NOAA Undersea Research Center at UNCW (Andrew Shepard, sheparda@uncw.edu; 910-962-2446)
- NOAA Coastal Services Center (Geno Olmi, geno.olmi@noaa.gov)
- North Carolina State Univ. (Len Pietrafesa, len_pietrafesa@ncsu.edu)
- North Carolina Sea Grant (Ronald Hodson, ronald_hodson@ncsu.edu, 919-515-2454)

BROAD CATEGORY: __Outreach and Education; __Climate; **_x_Water and Weather;** **_x_Ecosystems;** __Homeland Security; **_x_Fisheries;** **_x_Other (title)_Ocean Observing_**

PROJECT SUMMARY:

Major Objective: To provide an interdisciplinary science-based framework that supports sound public policy leading to wise coastal use, sustainable fisheries and improved coastal ocean ecosystem health.

NOAA Relevancy: NOAA funded program, part of an increasing effort to develop a national Integrated Ocean Observing Program; results apply to many NOAA goals.

Background & Partners: The *Coastal Ocean Research and Monitoring Program (CORMP)* at the University of North Carolina at Wilmington (UNCW) collects data, including physical processes, ocean color, water quality, radiation, sediment types and seafloor community characteristics, during monthly sampling transects and from long-term moorings off North and South Carolina coasts.

CORMP works with several other NOAA partners. The program is managed by NOAA's Coastal Services Center, as part of a larger consortium of NOAA observing programs, the Coastal Ocean Technology System (COTS). NOAA's Undersea Research Center at UNCW provides dive support for CORMP moorings and research efforts. CORMP research and monitoring efforts are co-funded by several other state and federal programs, including NC Sea Grant.

Products/Outcomes: Data products disseminated via national clearinghouse nodes for metadata, ftp site for data sets, and interactive Web-based Geographic Information System for products. Models in development include a storm surge model for the Cape Fear River basin and a general shelf circulation model.

PROJECT TITLE: NOAA/U.S. Lifesaving Association (USLA) Rip Current Safety Campaign

COLLABORATING PROGRAMS/ CONTACTS:

- Sea Grant: NC Sea Grant and National Office (Spencer Rogers, rogerssp@uncw.edu, 910-962-2491; Katie Mosher, katie_mosher@ncsu.edu, 919-515-9069)
- National Weather Service: Wilmington, Morehead City and Wakefield, VA, and Headquarters office (Steve Pfaff, steven.pfaff@noaa.gov, 910-762-8724)
- National Ocean Service Coastal Services Center and Headquarters office (National contact: Ben Sherman, ben.sherman@noaa.gov, 301-713-3066)
- U.S. Lifesaving Association (National Contact: Chris Brewster, president, brewster@lifesaver1.com)
- North Carolina Beach Communities (Lengthy contact list available upon request)
- Wrightsville Beach Chamber of Commerce (Reid Hardy, past president, reid.hardy@suntrust.com; 910-791-0969)

BROAD CATEGORY: ☒ **Outreach and Education**; ☐ Climate; ☒ **Water and Weather**; ☐ Ecosystems; ☐ Homeland Security; ☐ Fisheries; ☐ Other (title) _____

PROJECT SUMMARY:

Major Objective: Public awareness of rip currents, including how they form; tips for spotting, how to avoid, how to escape.

NOAA Relevancy: Rip current safety fits into public outreach and education as well as weather/water, with the Rip Current Outlook product being added to many Surf Zone Forecasts.

Background & Partners: North Carolina Sea Grant has been involved with rip current safety projects, including posters and a video, since the 1970s. Steve Pfaff, Wilmington office of National Weather Service (NWS), began developing local rip current forecasts in 2000. Spencer Rogers, Sea Grant's coastal erosion specialist, provided technical assistance. Pfaff also reviewed research and models developed by NWS staff in Florida and Florida Sea Grant researchers. NWS offices in Wilmington, NC, Morehead City, NC, and Wakefield, VA, joined NC Sea Grant and beach communities to establish a rip current safety sign campaign in North Carolina, resulting in more than 600 signs posted along the NC coast. NWS provided critical seed funding for a number of towns to purchase initial signs. The signs also were adapted for use in South Carolina, Wisconsin, and Texas. In early 2003, a national Rip Current Safety Task Force was developed with NOAA representatives from Sea Grant, NWS and the National Ocean Service (NOS), along with the U.S. Lifesaving Association. Katie Mosher from NC Sea Grant serves on the national committee. Rogers and Pfaff provide critical technical input for the effort.

Products/Outcomes: NWS model identified geologic conditions at various beaches, which would combine with weather and wave conditions to raise the likelihood of rip currents on a given day. On May 24, 2004, in Wrightsville Beach, the national task force unveiled its new campaign, "Break the Grip of the Rip," including sample signs, brochures and a public service announcement. Future projects expected include a safety/training video and science curricula.

PROJECT TITLE: Schools of Ocean Exploration

COLLABORATING PROGRAMS/ CONTACTS:

- NOAA Undersea Research Center at the University of North Carolina at Wilmington (Andrew Shepard, sheparda@uncw.edu, 910-962-2446)
- NC Sea Grant (Terri Kirby Hathaway, terrikh@csi.northcarolina.edu, 252-475-3663; Katie Mosher, katie_mosher@ncsu.edu, 919-515-9069)
- Southeast Center for Ocean Science Education Excellence (Lundie Spence, lundie.spence@scseagrant.org)
- North Carolina Aquariums (Peggy Sloan, peggy.sloan@ncmail.net, 910-458-8259 ext. 230)
- NOAA Office of Ocean Exploration (Paula Keener-Chavis, paula.keener-chavis@noaa.gov, 301-713-9444)

BROAD CATEGORY: ☒ **Outreach and Education**; ☐ Climate; ☐ Water and Weather; ☒ **Ecosystems**;
☐ Homeland Security; ☐ Fisheries; ☐ Other (title) _____

PROJECT SUMMARY:

Major Objective: To engage classroom teachers and informal educators in lessons that can be derived from NOAA Ocean Exploration cruises and other NOAA ocean research programs.

NOAA Relevancy: Ocean science literacy; outreach and education.

Background & Partners: In August 2002, the National Undersea Research Center worked with North Carolina Sea Grant, the NOAA Office of Ocean Exploration and the N.C. Aquariums to present a workshop for teachers who wanted to use NOAA Ocean Exploration Cruises as springboards for presenting science lessons that meet state and national science standards.

Several dozen educators participated in the workshop, which included a live satellite phone chat with researchers aboard a cruise off the East Coast. Since the workshop, Lundie Spence has moved to the Center for Ocean Science Education Excellence- Southeast region (COSEE Southeast), where she directs a regional program that includes North and South Carolina as well as Georgia

Products/Outcomes: Resulting educational products available at <http://www.oceanexplorer.noaa.gov>. Future plans include annual COSEE Southeast regional workshops co-sponsored by Ocean Exploration.

PROJECT TITLE: Estuarine Shoreline Manuals: *The Soundfront Series* and *Drowning the North Carolina Coast*

COLLABORATING PROGRAMS/ CONTACTS:

- NC Sea Grant (Katie Mosher, katie_mosher@ncsu.edu, 919-515-9069; Walter Clark, walter_clark@ncsu.edu, 919-515-2454; Spencer Rogers, rogerssp@uncw.edu, 910-962-2491; Ann Green, agcarver@unity.ncsu.edu, 919-515-9070)
- N.C. Division of Coastal Management/NOAA Coastal Zone Program (Mike Lopazanski, mike.lopezanski@ncmail.net, 919-733-2293)
- Albemarle-Pamlico National Estuary Program (Bill Crowell, bill.crowell@ncmail.net, 919-715-1327)
- N.C. Coastal Federation (Tracy Skrabal, tracys@nccoast.org, 910-790-3275)
- East Carolina University, Geology Department (Stanley R. Riggs, riggss@mail.ecu.edu, 252-328-6015)
- UNC Coastal Studies Institute (Nancy White, director, nmwhite@csi.northcarolina.edu, 252-475-3663.

BROAD CATEGORY: ☒ **Outreach and Education**; ☐ Climate; ☐ Water and Weather; ☒ **Ecosystems**;
☐ Homeland Security; ☐ Fisheries; ☒ **Other Coastal Hazards**

PROJECT SUMMARY:

Major Objective: To provide useful information tools for coastal resource managers, local community officials and the general public regarding estuarine shoreline issues.

NOAA Relevancy: NOAA's mission includes sustaining healthy coastal ecosystems and protection of life and property in the coastal zone from natural hazards.

Background & Partners: N.C. Coastal Resources Commission required information on estuarine buffer regulations in the late 1990s, including on: 1) natural processes in the estuarine region; 2) options to manage shoreline erosion and reduce development impacts on water quality; and 3) policy and management in the estuarine region. NC Division of Coastal Management (DCM) contracted with NC Sea Grant to develop *The Soundfront Series* of 4 guidebooks to address the issues (authors above). Technical data provided by Riggs offered an opportunity to develop an expanded scientific text on estuarine erosion, with a focus on the impacts of sea-level rise and estuarine dynamics. DCM again provided NOAA funding for the 150-page textbook, which was edited and published by NC Sea Grant. The Albemarle-Pamlico National Estuary Program also supported the project with funding to expand the print run.

Products & Outcomes: *The Soundfront Series* is used in workshops of the NC Coastal Federation and National Estuarine Research Reserve. The guidebooks also are used in university classes, and have been ordered in bulk by community groups. Riggs' more detailed book, *Drowning the North Carolina Coast*, is expected to be used as a text in geology classes. All five manuals are resources for planning departments and various government agencies, and for property owners interested in estuarine processes.

PROJECT TITLE: Tar River Basin Flood Mapping Project**COLLABORATING PROGRAMS/ CONTACTS:**

- Coastal Services Center – Charleston (Mark Kolowith, Mark.Kolowith@noaa.gov, 843-740-1265)
- National Weather Service (NWS) River Forecast Center - Atlanta
- NWS Weather Forecast Office – Raleigh
- NWS Weather Forecast Office - Morehead City
- State of North Carolina Flood Mapping Program
- US Geological Survey (USGS)

BROAD CATEGORY: ☒ **Outreach and Education**; ☐ Climate; ☒ **Water and Weather**; ☐ Ecosystems;
☐ Homeland Security; ☐ Fisheries; ☐ Other _____

PROJECT SUMMARY:

Major Objective: Produce better flood warnings and improve methods to convey this warning information to first responders, government leaders, and the public.

NOAA Relevancy: NOAA's mission includes protection of life and property in the coastal zone from natural hazards.

Background & Partners: On average, freshwater flooding kills more than 100 people and causes billions of dollars of damage across the nation each year. Producing better flood warnings and improving methods to convey this warning information to first responders, government leaders, and the public by NOAA is necessary to reduce this high loss of life and property. Hurricane Floyd in 1999 showed that although the NOAA/NWS river flood forecasting service prepared outstanding, "flood of record" forecasts before any rain began to fall, methods to deliver this critical information to those needing it were inadequate. Working with North Carolina's Flood Mapping Program and USGS, several NOAA groups are in the final stages of developing and producing a graphical method to visually depict forecasted flooding on maps that are accessible on the internet. This demonstration project, under the umbrella of the NWS Advanced Hydrologic Prediction Service (AHPS) initiative, has targeted the Tar River Basin in eastern North Carolina. The Tar River was one of the hardest hit river basins in Hurricane Floyd.

Products/Outcomes: Graphical method to visually depict forecasted flooding on maps that are accessible on the internet.

PROJECT TITLE: From Weather Observations to Climate Data: Partnership between the NWS Forecast Office and NESDIS National Climatic Data Center

COLLABORATING PROGRAMS/ CONTACTS:

- National Weather Service (NWS) Forecast Office at Greenville-Spartanburg, SC (WFO GSP) (Contact: Terry Benthall, terry.benthall@noaa.gov, 864-848-9970 ext 225)
- National Environmental Data and Information Service's (NESDIS) National Climatic Data Center (NCDC) (Contact: Stephen Del Greco, Stephen.A.Delgreco@noaa.gov, 828-271-4281)

BROAD CATEGORY: ☐ Outreach and Education; ☒ **Climate**; ☒ **Water and Weather**; ☐ Ecosystems; ☐ Homeland Security; ☐ Fisheries; ☐ Other (title) _____

PROJECT SUMMARY:

Major Objective: Provide detailed, accurate, stable climatic data during the current global focus on climatic change.

NOAA Relevancy: Serves NOAA goal to understand global climate change impacts at local level.

Background & Partners: A synergistic, ongoing partnership has developed between the NWS Forecast Office at Greenville-Spartanburg, SC (WFO GSP) and the NESDIS National Climatic Data Center (NCDC). Joint NCDC/WFO GSP activities fall into two general areas: 1) data gathering, processing, quality control and instrumentation, and 2) climate studies. NCDC is the end processor and repository of data from the network of cooperative observers, which in turn is managed by NWS field offices. Proximity has fostered a close working relationship between the WFO data acquisition unit and the NCDC quality control branch. NCDC staff gain hands-on experience working with the Cooperative Program Manager (CPM) to repair Fischer-Porter rain gauges, as well as river gauges. Several others have visited the WFO to see how Cooperative Observer Program (COOP) data are processed and checked for accuracy. In turn, WFO staff visit NCDC to learn how COOP data undergoes final quality control, before it is archived, published, and distributed to customers in many forms. Acquisition of historical weather data from the NCDC archives has allowed the WFO GSP to extend its climatic record for various cities in its area of responsibility back a century or more.

Products/Outcomes: Cooperative Observers Appreciation Day, held at WFO GSP in October 2003: Volunteer cooperative observers from the western Carolinas and northeast Georgia met at WFO GSP, for awards presentations, media interviews, and southern barbecue picnic. This event publicized the ever-increasing importance of detailed, accurate, stable climatic data during the current focus on global climatic change.

PROJECT TITLE: NOAA NOS National Water Level Observation Network (NWLON) Station at Wrightsville Beach: Support for NWS Data Collection for Hurricane & Coastal Warnings.

COLLABORATING PROGRAMS/ CONTACTS:

- National Ocean Service (NOS) Center for Operational Products and Services (Mike Szabados, Mike.Szabados@NOAA.gov, 301-713-2981)
- National Weather Service (NWS) (Michael Caropolo, Meteorologist in Charge, Wilmington, NC, Michael.Caropolo@noaa.gov, 910-762-0524)

BROAD CATEGORY: __Outreach and Education; ☒ **Climate**; ☒ **Water and Weather**; __Ecosystems; __Homeland Security; __Fisheries; __Other _____

PROJECT SUMMARY

Major Objective: Provide timely information on coastal conditions to assist local users, such as emergency response managers and researchers.

NOAA Relevancy: NOAA mission includes prediction and response to extreme weather events.

Background & Partners: The NOS Center for Operational Oceanographic Products and Services was funded by the NWS to establish a new National Water Level Observing Network (NWLON) station at the Johnnie Mercer Pier in Wrightsville Beach, N.C. Existing NWLON gauges in North Carolina did not provide sufficient coverage for this area of the North Carolina coast, an area subject to hurricane activity.

This station will provide accurate near real time water level to support NWS storm surge and coastal flooding forecasts, and will also provide environmental observations of air/water temperature, wind speed/direction, and barometric pressure. The observations will be available to everyone.

Products/Outcomes: New NWLON station installation will be completed in May 2004 in time for the upcoming hurricane season. Data will be available on the web site <http://www.tidesonline.nos.noaa.gov>.

PROJECT TITLE: Carolinas Coastal Ocean Observation & Prediction System (Caro-COOPS)

COLLABORATING PROGRAMS/ CONTACTS:

- Baruch Institute for Marine Science (Madelyn Fletcher, fletcher@biol.sc.edu, 803-777-5288)
- North Carolina State University (Len Pietrafesa, leonard_pietrafesa@ncsu.edu)
- National Ocean Service Coastal Services Lab (Margaret Davidson, margaret.davidson@noaa.gov)
- National Ocean Data Center (C. Sun)
- National Weather Service (M. Caropolo; R. Bright)
- National Hurricane Center (J. Cione; P. Black)
- National Climatic Data Center (M. Plantico)

BROAD CATEGORY: ☒ **Outreach and Education;** ☒ **Climate;** ☒ **Water and Weather;** ☒ **Ecosystems;**
☐ **Homeland Security;** ☒ **Fisheries;** ☐ **Other (title)**_____

PROJECT SUMMARY:

Major Objective: Prediction of coastal ocean processes.

NOAA Relevancy: Serves several NOAA goals, including impacts of weather and water on coastal communities and fisheries management.

Background & Partners: The overall objectives are to: (1) integrate information on the causal biological, chemical, and physical processes in the Carolinas' coastal ocean to provide a thorough understanding of how physical forcing and biological responses are coupled on regional spatial scales and seasonal, inter-annual, and decadal time scales; (2) assess the predictability of specific coastal processes and events; (3) develop accurate forecasting models; (4) create tools for applying and evaluating these predictions in the context of "end-to-end" early-warning systems; and (5) detect and understand the regional signals of climate variability and change.

An initial demonstration of the real-time interdisciplinary forecast concept for Caro-COOPS is real-time prediction and analyses of storm surge and flooding before and during landfall of coastal storms. This will improve warnings and provide local officials with the information needed for mitigation, preparedness and prevention measures. Most recently, Caro-COOPS has also been laying the groundwork to develop a pilot project to incorporate predictions of climate variability and other meteorological and oceanic forcings into the development of tools that support commercial and recreational fisheries and their management.

Products/Outcomes: Described at <http://www.carocoops.org>.

PROJECT TITLE: NOS/NCCOS Beaufort Lab and NWS Newport Collaborative Efforts

COLLABORATING PROGRAMS/ CONTACTS:

- National Ocean Service, National Center for Coastal Ocean Service (NCCOS), Beaufort, NC (Dave Johnson, David.Johnson@noaa.gov, 252-728-8746)
- NOAA/NWS, Newport, NC

BROAD CATEGORY: ☒ **Outreach and Education**; ☐ Climate; ☐ Water and Weather; ☐ Ecosystems; ☐ Homeland Security; ☐ Fisheries; ☒ Other (title) **training, observations**

PROJECT SUMMARY:

Major Objective: Promote NOAA services to the public, leverage NOAA assets.

NOAA Relevancy: Several NOAA goals addressed through joint outreach and training efforts.

Background & Partners: National Weather Service Office in Newport, NC, partners with NOS in Beaufort, NC in several areas. In the outreach area, partners will set up a joint NOAA booth at local fishing shows, festivals, etc. Instrumentation of the local NOAA vessels and creation of local marine reporting network is underway. Although a joint Web page appears not to be a possibility, links to nearby NOAA offices and national NOAA links are being incorporated in the NWS Newport/Morehead City Web page. Joint training opportunities are also being explored, especially in non-technical areas such as safety, HAZ-MAT, and property management. Lastly, the NWS Newport office is working with NOS in Silver Spring, MD, collecting data for NOS to use in their testing of a new visibility sensor at the NWS Automated Surface Observing System (ASOS) site at Cape Hatteras, NC.

Products/Outcomes: Joint NOAA booth at local fishing shows and festivals.

PROJECT TITLE: NOS Partnership to Investigate Local Ecological and Human Impacts of Long-term Sea Level Rise and Sea Level Variations for a Specific Coastal Region

COLLABORATING PROGRAMS/ CONTACTS:

- NOAA National Ocean Service (Kurt Hess, Principal Investigator, kurt.hess@noaa.gov, 301-713-2801 x123)
- NOAA National Ocean Service (Carol Auer, NOS Program Manager, carol.auer@noaa.gov, 301-713-3338 x164)
- NC Division of Coastal Management (Guy Stefanski, strategic planning coordinator, guy.stefanski@ncmail.net, 919-733-2293 x253)
- NOAA National Ocean Service (Richard Stumpf, richard.stumpf@noaa.gov, 301-713-3028 x173)
- US Geological Survey, National Mapping Division (Dean Gesch, digital elevation models, gesch@usgs.gov, 605-594-6055)

BROAD CATEGORY: ☐ Outreach and Education; ☒ **Climate**; ☒ **Water and Weather**; ☒ **Ecosystems**;
☐ Homeland Security; ☒ **Fisheries**; ☐ Other (title) _____

PROJECT SUMMARY:

Major Objective: Determine potential impacts of proposed long-term sea level rise (or a multi-year change in sea level) for a specific coastal region.

NOAA Relevancy: 2000 NOAA national assessment identified sea level rise as one of the key coastal and marine stresses.

Background & Partners: Recent national assessment (*The Potential Consequences of Climate Variability and Change*, NOAA Coastal Ocean Program Decision Analysis Series No. 21, October 2000) identified sea level rise as one of the key coastal and marine stresses (along with: increased intensity of coastal storms; alterations in water delivery to estuaries; changes in temperature, stratification, and circulation; and increased concentrations of dissolved oceanic CO₂). Yet, few studies have looked at the potential impact of a proposed long-term sea level rise (or a multi-year change in sea level) for a specific coastal region. Project complements NOAA efforts to predict the effects of climate change and variability on physical systems (e.g., temperature, sea level, circulation, water cycle) by extending climate forecasts to their impacts on coastal ecosystems. The project focuses on the sea level component of the system, but cannot be totally separated from the effects of storms (which in the future might occur at an increased or a decreased frequency and intensity). CSCOR will solicit proposals from academic and government researchers outside of NOS to develop ecological models demonstrating landscape responses to sea level rise that are relevant to critical natural resources.

Products/Outcomes: Bathymetric-topographic digital elevation model (DEM), hydrodynamic circulation model, and integrated land-water coastal flooding model provide first estimate of future shorelines, nearshore bathymetry, and basis for assessing local ecological and human impacts. Predictions from CSCOR models (NOS coastal flooding model coupled with ecological models) will allow coastal managers to proactively plan mitigation and protection strategies for ecologically and economically important habitats and species.

PROJECT TITLE: Island-wide Plan to Reduce Stormwater and Aquaculture Impacts to Estuarine Waters

COLLABORATING PROGRAMS/ CONTACTS:

- NOAA Center for Coastal Fisheries and Habitat Research (Carolyn Currin, carolyn.currin@noaa.gov, 252-728-8749)
- NC Division of Coastal Management (Mike Lopazanski, mike.lopazanski@ncmail.net, 919-733-2293)
- Duke University Marine Lab (Bill Kirby-Smith)
- NOAA National Estuarine Research Reserve System in NC (Doug Coker, Education Coordinator)

BROAD CATEGORY: ☒ **Outreach and Education**; ☐ Climate; ☐ Water and Weather; ☒ **Ecosystems**;
☐ Homeland Security; ☐ Fisheries; ☐ Other (title) _____

PROJECT SUMMARY:

Major Objective: The project will develop a plan to implement innovative technologies to reduce stormwater runoff and aquaculture effluent into estuarine waters, and reduce potential adverse environmental impacts of marine laboratory operations on Pivers Island.

NOAA Relevancy: This project directly addresses the NOAA mission to protect, restore and manage the use of coastal and ocean resources through ecosystem-based management.

Background & Partners: Stormwater runoff is a major source of pollution and decreases water quality in estuaries and the coastal ocean, which in turn can have negative effects on living marine resources and ecosystem production. Continued human development of coastal areas means that the stresses on the coastal ocean from storm water runoff will increase unless new strategies are developed to reduce its impact. By addressing processes occurring on the land and their impact on storm water delivery to the ocean, this project supports an ecosystem-based management approach to the problem of maintaining and improving estuarine water quality.

NOAA partners on this project will provide scientific expertise in developing and evaluating innovative approaches to limiting the impacts of stormwater runoff. Duke University Marine Lab will contribute scientific expertise and contribute to education efforts. NC DCM will contribute staff for public outreach and education activities associated with this project. Both NOAA and Duke will contribute facility support for the installation of stormwater and aquaculture effluent mitigation projects.

Products/Outcomes: Strategic plan to implement innovative technologies to reduce stormwater runoff and aquaculture effluent in NC waters. The project will also develop a public education program showcasing the technologies and approaches used.

APPENDIX B: Participants

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APPENDIX C: Workshop Agenda

AGENDA:

May 5, 2004	University of NC at Wilmington (UNCW) Center for Marine Science (CMS)
8:30 - 9:00 a.m.	Continental Breakfast hosted by CMS
9:00 - 9:15	Welcome: Andy Shepard, NOAA Undersea Research Center at UNCW Partnership Overview: Ron Hodson, NC Sea Grant Meeting Goals: Steve Harned, National Weather Service (NWS), Raleigh, NC
9:15 - 10:00	NOAA Program Structure Overview Jeff Payne, NOAA Coastal Services Center, Charleston, SC
10:00 - 10:15	Break
10:15 - 11:30	Examples of <i>NOAA in NC</i> partnerships <i>NOAA Coastal Ocean Research and Monitoring Program</i> Marvin Moss, UNC-Wilmington <i>From Weather Observations to Climate Data: NWS Forecast Office and NESDIS National Climatic Data Center Partnership</i> Terry Benthall, National Weather Service, Greer, SC <i>Tar River Basin Flood Mapping Project</i> , Mark Kolowith, NOAA Coastal Services Center, Charleston, SC Steve Harned, National Weather Service, Raleigh, NC <i>NOAA-USLA Rip Current Safety Campaign</i> Steve Pfaff, National Weather Service, Wilmington, NC Spencer Rogers, North Carolina Sea Grant <i>Estuarine Shoreline Manual Series</i> Mike Lopazanski, N.C. Division of Coastal Management Katie Mosher, North Carolina Sea Grant
11:30 - Noon	Plenary session: Instructions for afternoon breakouts
Noon -1:00 p.m.	Box lunches, informal discussions
1:00 - 3:00	Breakout sessions Three working groups with interdisciplinary mix of expertise/programs. <i>Goals:</i> 1. Identify NOAA strengths and capacity in NC; 2. Identify contacts for existing and future partnerships; 3. Identify mechanisms for improving communications/enhancing partnerships; and 4. Identify next steps for <i>NOAA in NC</i> .
3:00 - 3:15	Break
3:15 - 4:00	Plenary session: group reports, action plan development
4:00	Adjourn

APPENDIX D: Breakout Group Notes

RED GROUP:

Andrew Shepard, facilitator

Jean Lindbert, recorder

VISION STATEMENT: *“One NOAA” serving Carolinas and the nation*

New Partnerships:

Title: Climate/Fisheries Production

Category: Fisheries; Climate

Summary:

- 18 years of BridgeNet program samples
- 30-40 years menhaden data
- Review & correlate fish data w/ climate data and other control variables

Partners:

- NOAA Fisheries (John Merriner, Beaufort), NOAA/NESDIS/NWS/NOS, NC DMF

Potential \$:

- NOAA climate and ecosystem NOAA team
- stock assessment improvement

Title: Integration of maps with other NOAA data and services

Category: Fisheries; Ecosystems; Weather/Water

Summary:

- Combine higher resolution maps with NWS services and data with ocean data (EC, MPA sites, WQ (watershed)

Partners:

- NC Division of Marine Fisheries (Coastal Habitat Protection Plan, Mike Street), NWS, NGDC, Coast Survey, National Geodetic survey, USGS

Potential \$: NOAA CSC

Title: Atmospheric Deposition and Weather

Category: Ecosystems; Weather/Water

Summary:

- Pig wastes/ nitrate pathways
- Control of productivity, pollution, recruitment by atmosphere deposition
- New England/Canada model – air quality /ecosystem

Partners:

- NC Sea Grant, NOAA Aeronomy Lab, NWS, NC DEP

Potential \$:

- NOAA Climate and Ecosystem Matrix Program
- NC Sea Grant

Outreach Mechanisms:*Educate ourselves:*

- Share information through periodic rotating meetings, electronic conferences;
- DVD for all partners that includes: NOAA overview (mission), NC programs, unit descriptions, examples of products; and
- Find funds from NOAA for outreach and education.

Educate Others:

- TV & Radio best vehicles for getting information to the public (e.g., UNCW "Environmental Minute" programs dedicated to NOAA projects; weather channel, PBS);
- Web page for *NOAA in NC*-- portal to partners; develop with NOS multimedia team (ANS contact T. LaPointe), may serve as a model for every state or "NOAA in your state" page on NOAA Web site;
- DVDs for distribution to schools, informal education centers, stakeholders (e.g., fishermen); and
- Establish *NOAA in NC* Speakers Bureau – shared presentations, slides, text (web, DVDs, DVD collection) with NC Sea Grant.

*Annual Symposium:**Purposes:*

- Networking and Cross Line Office partnerships; keynote speaker; selected presentations, new partnerships (similar to this workshop);
- *NOAA in NC* family meeting (fish fry/barbeque), social event; and
- Public symposium: submitted/invited presentations; poster sessions; feature NOAA accomplishments, services, and products.

Venues:

- NWS Eastern Regional meeting, held from Maine to South Carolina); participants include Directors, Outreach, Science;
- NC Coastal Federation;
- Rotate between NOAA programs; tour facilities; field excursions; and
- Raleigh; chance to invite state/federal agencies and congressional staffers.

YELLOW GROUP REPORT

Stephen Harned, NWS, Facilitator
Michael Caropolo, NWS, Recorder
Scott Baker Jr., NC Sea Grant

Steven Pfaff, NWS
Don Reuter, NC DENR
John Broadwater, NOS
Martin Posey, UNCW

New Partnerships:

Title: NC Water Hazmat Response

Category: Ecosystems; Commerce and Transportation

Summary:

- Update NC inventory of information (contact numbers) for NOAA HAZMAT- Seattle
- Update needed informational contacts to support Hazmat response team
- Update inventory and decrease response times to help mitigate environmental damage.

Partners:

- NOAA Hazmat, NWS, NOS, NC Sea Grant, NOAA Fisheries, NC DNR, NC DEM, US Coast Guard, NC State Ports, NC DWQ

Potential \$: NC Sea Grant mini-grant program

Title: Community Based Monitoring of Invasive Species

Category: Education, Ecosystems

Summary:

- Education regarding marine environment and monitoring the spread of invasive species.
- Invasive species are increasing problem with economic and ecosystem effects; build upon scattered investigator-based programs; support research and grants to build a broader-based monitoring program; bring community (people and students) into contact with coastal animals and plants and increase awareness on ecosystem issues.
- General education to increase awareness; produce baseline map of where the invasive species are, and where they are heading.

Partners:

- NOAA Fisheries, NOS Habitat Center, NC Sea Grant, NC State Ports, Local Groups (schools, etc.), NC DNR

Potential \$: NOAA Sea Grant Invasive Species Program

Outreach Mechanisms:

- Workshops
- Newsletters/Magazines
- Media Contacts with specific NOAA contacts
- Web site: market for schools; links to other NOAA websites on our homepages
- List serve
- Annual meetings including summary reports with comments and feedback
- Participation at fairs, expos and career days; distribute NOAA partners information via brochures and posters; use personnel from other agencies to staff booths at these fairs
- Single NOAA brochure that lists all agencies and their websites

BLUE GROUP REPORT

Jack Thigpen, facilitator
Mike Lopazanski, recorder

VISION STATEMENT: *“NOAA research touches US all.”*

New Partnerships:

Title: Outreach and Education between NERRs and Beaufort Fisheries

Category: Outreach & Education, Fisheries, Other-- Algal Blooms, Habitat Protection

Summary:

- Objectives include to promote NOAA corporate image and research results, and to educate the public through county-specific outreach.
- Beaufort NCCOS lab focuses on marine research and wishes to increase related outreach and education; NWS has 5% of people devoted to O&E related to its atmospheric research; Sea Grant and NERRs have been more involved in doing O&E that promotes ocean and coastal research; project would partner Sea Grant, NERRS and NCCOS to build O&E for Beaufort Lab.
- Project should make connection between research and how it may affect everyone’s daily life —“NOAA research touches US all”
- Beaufort Lab can also contribute to NERRs mission, e.g., coordinate research activities with research activities of the NERRs, and sharing of data and information.

Partners:

- NC National Estuarine Research Reserves, NOAA Beaufort Lab, Sea Grant, NWS

Potential Funding:

- NOAA Sea Grant, NERRS

Title: Beach Safety -- rip currents, hazardous marine life, UV, health, safety, water quality

Categories: Outreach and Education, Weather and Water

Summary:

- Expand on Rip Current Partnership campaign to include other information on beach safety
- Objectives: Identify gaps and improve public awareness of safety and environmental issues related to beach use.
- Methods may include: New Web products and links to related websites from the NWS sites; public info products for mass distribution to public, e.g., via rental facilities; signs at the beach accesses; training for life guards; video exhibits/loops at aquariums and museums.

Partners:

- NWS, NC Sea Grant, USLA, NOS, NOAA Fisheries
- Partner with, e.g., Corona or Budweiser for bottle information.

Potential Funding: same sources that fund successful rip current campaign

Title: Weather, ocean observing, and prediction system for NC

Categories: Weather and Water, Ecosystem

Summary:

- Objectives: define requirements for NC IOOS, and improve regional coordination of observing data
- Ocean observing has evolved across the state in an uncoordinated and unstructured fashion; local agencies are competing for same scarce resources for similar projects and needs.
- Methods: establish a coordinating body; NCDOT gives NWS wind/wave info from the middle of the sounds using instrumented ferries; provide similar info from NOAA vessels and boaters in the ocean; first identify users and gaps in information; expand cooperative efforts to other vessels and evolving network of offshore observatories (buoys and moorings); serve and expand activities related to DOD/Homeland Security.

Partners:

- SEACOOS, CORMP, USMC, NWS, NC Sea Grant, USCG, Navy, universities, USGS, NOAA Fisheries, Ocean.US, State of NC, NERRs, USACOE

Potential Funding:

- IOOS, SEACOOS, DoD

Outreach Mechanisms

Communication between NOAA offices is often seldom or none. Outreach activities are too narrow and too focused within areas of responsibility, thus, lessening impact and public awareness value.

- Database -- *NOAA in NC* website, people and projects
- *NOAA in NC* email list serve
- Commercial Fishing Show
- NWS, Sea Grant, NOAA Fisheries work together for displays
- List of events
- Online Forum with different topics, event and functions, projects
- Teleconferenced meetings -- need more sites
- Electronic Newsletter
- Continue *NOAA in NC* meetings, rotate the meetings to ensure attendance by all offices.
- Have meetings to include others than NOAA partners. Decision makers, city council members, legislators and aids
- Promote NOAA programs to agencies outside NOAA by participating in their professional meetings, e.g., hurricane conference, “All Hazards” Conference, and Floodplain conference; send representative to these other meetings.
- *NOAA in NC* brochure; related overview talk that could be given to other groups; post on Web
- Quarterly conference calls -- representative to report what is going on with an individual office; update on new projects and upcoming events; exchange information from DC, e.g., funding opportunities.
- State legislative and congressional staff annual updates; invite them to *NOAA in NC* conference
- Cross-cutting links on Web sites
- *NOAA in NC* Clearinghouse – place/portal to go for linked data and information
- Use NOAA Weather Radio during clear weather to advertise NOAA Web sites with other information; promote *NOAA in NC* Web site.